

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Item 7

AGENDA ID 14408

ENERGY DIVISION

RESOLUTION G-3513 (Rev. 1)

December 3, 2015

**R E S O L U T I O N**

Resolution G-3513. The California Energy Commission (CEC) requests approval of a supplemental natural gas research plan.

PROPOSED OUTCOME:

- Approve the CEC's proposed supplementary *Climate, Drought, and Safety Natural Gas Budget Plan* for the investment of \$3.6 million in previously allocated unspent funds.

SAFETY CONSIDERATIONS:

- This resolution approves and prioritizes the implementation of the CEC's proposed natural gas safety RD&D efforts; the successful application of improved safety technologies will support continued safe pipeline operation.

ESTIMATED COST:

- Approves a new research plan to invest \$3.6 million in previously-authorized, unspent funds in critical research areas at no additional ratepayer cost.
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**SUMMARY**

**This Resolution approves the CEC's *Natural Gas Research, Development, and Demonstration Program Proposed Climate, Drought, and Safety Natural Gas Budget Plan*. The Program was established pursuant to D.04-08-010. The CPUC approves the CEC's proposed plan to invest previously-authorized, unused funds in critical climate and safety needs, filed as directed by Resolution G-3507.**

**BACKGROUND**

**D.04-08-010 (the Decision) implemented Assembly Bill (AB) 1002, establishing a natural gas surcharge to fund gas public purpose programs, including public interest research and development (R&D).**

The CPUC instituted Rulemaking 02-10-001 to implement AB 1002. In this proceeding the Commission addressed various issues related to the design and implementation of a surcharge to fund gas public purpose programs, resulting in D.04-08-010.

**D.04-08-010 established certain criteria for gas R&D projects to be approved under this program.**

The Decision defines public interest gas R&D activities as those which “are directed towards developing science or technology, 1) the benefits of which accrue to California citizens and 2) are not adequately addressed by competitive or regulated entities.”<sup>1</sup>

The CPUC established the following criteria for public interest gas R&D projects:

- 1) Focus on energy efficiency, renewable technologies, conservation and environmental issues,
- 2) Support State Energy policy,
- 3) Offer a reasonable probability of providing benefits to the general public, and
- 4) Consider opportunities for collaboration and co-funding opportunities with other entities.

**D.04-08-010 designated the CEC as administrator of the R&D program.**

The CEC administers various public interest research programs and is publicly accountable, being subject to the Bagley-Keene Open Meeting Act and the

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<sup>1</sup> D.04-08-010 at 25.

Public Records Act.<sup>2</sup> CEC selects funding areas, which the CPUC then reviews and approves.

**D.04-08-010 reserved ultimate oversight for the CPUC.**

The CPUC is responsible for adopting the R&D program, and for setting the surcharge to fund the R&D program. The Decision made it clear that the CPUC has final responsibility to “approve and resolve administration, funding, project approval, or other matters, and make a final decision.”<sup>3</sup> The Decision further designated the CPUC’s Energy Division to serve as this Commission’s advisor.

**The Commission approved the CEC’s R&D program plans and budgets from 2005 to Fiscal Years 2015-2016.**

D.04-08-010 established a zero-based budget for the Gas R&D program, starting at \$12 million for 2005, with maximum annual increases of up to \$3 million per year, subject to CPUC approval, up to \$24 million per year.<sup>4</sup> Historically, each year the CEC has requested, and the CPUC has approved, the maximum budget increase over the previous year. Thus, the budget ceiling reached \$24 million in Fiscal Year (FY) 2009-2010. CPUC has approved a \$24 million budget since FY 2010-2011.

**The CEC was directed to supplement its Proposed Program Plan and Funding Request for Fiscal Year 2015-2016.**

In addition to providing its research plan and budget for FY 2015-16, the CEC also provided an accounting of previously-authorized, unspent funds, totaling \$3.6 million. The FY 2015-16 plan was approved by the CPUC in Resolution G-3507 on June 25, 2015. In response to several high-priority policy directives, the resolution directed the CEC to file a supplementary plan investing the unspent funds in critical areas of safety, climate, and drought-related RD&D.

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<sup>2</sup> D.04-08-010 at 31.

<sup>3</sup> D.04-08-010 at 32.

<sup>4</sup> D.04-08-010 at 38.

**DISCUSSION**

**The supplementary *Climate, Drought, and Safety Natural Gas Budget Plan* directs available funds to critical areas without additional ratepayer impact.**

The supplementary plan proposes to invest the \$3.6 million in funds in three main areas, as directed by the Commission: natural gas pipeline safety, climate change and drought impacts on natural gas infrastructure, and long-term natural gas considerations within a carbon-constrained, water-efficient environment. These funds are already in the CEC's program fund, and are available as a result of unused money being returned to the CEC by contractors on prior projects. Previously, the Commission has determined that these available funds may be used towards the subsequent year's Program Plan. In Resolution G-3507, the Commission found that, due to the historic drought, safety concerns, and the recent issuance of Executive Orders B-29-15 (creating drought-responsive water measures) and B-30-15 (setting additional carbon emissions reductions goals), an immediate supplementation of the FY 2015-16 plan was warranted. The instant Resolution, which re-directs the special investment of existing funds, does not affect the current \$24 million maximum budget for new funds each FY period; the \$3.6 million being reinvested now is part of previous years' budgets. This Resolution also has no precedential value regarding the overall program review or funding levels beyond FY 2015-2016, as the CEC is required to propose a zero-based budget for each fiscal year.

**Consistent with D.04-08-010, the CEC's Public Interest Energy Research Program for Natural Gas focuses on research and development directed towards maximizing energy efficiency and renewable technologies, mitigating environmental effects of gas consumption, improving natural gas vehicle performance, and enhancing natural gas pipeline safety.**

Consistent with the guidance in Resolution G-3507 and its overall policy and program goals, the CEC's proposed supplementary Climate, Drought, and Safety Natural Gas Budget Plan allocates the \$3.6 million in available funds to the following priority focus research initiatives: 1) Risk Analysis of Natural Gas Pipeline Infrastructure (\$1.5 million), 2) Groundwater Related Subsidence Impacts on the Natural Gas System (\$1.6 million), and 3) Long Term Strategic

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View of the use of Natural Gas in a Carbon-Constrained, Water-Efficient Environment (\$500,000). The CEC also details its current related research efforts, and its work to accelerate related initiatives in its regular FY2015-16 plan. The following table summarizes the foci of some current/existing work, related to the proposals in the Supplementary plan.

Natural Gas RD&D Area	Existing/Planned RD&D	Proposed RD&D
<b>Pipeline Safety</b>	<ul style="list-style-type: none"> <li>Assessments of status of pipeline inspection technologies, including analyses of those not yet used in California; California-focused technology baselining and recommendations</li> <li>Developing low-cost sensors to provide real time data for pipeline safety</li> <li>Demonstrating right of way (ROW) monitoring and excavation damage prevention technologies</li> <li>Demonstrating technologies to improve situational awareness of infrastructure information and enhance integrity management practices through risk analysis</li> <li>Assessments of safety monitoring technologies</li> </ul>	<p>1) Risk Analysis of Natural Gas Pipeline Infrastructure (\$1.5 million):</p> <ul style="list-style-type: none"> <li>Identify and quantify all pipeline integrity threats and consequences through holistic analysis</li> <li>Assess the effectiveness of risk reduction measures</li> <li>Develop and evaluate risk mitigation measures for pipelines in known high-risk and subsidence areas</li> <li>Synergize with subsidence efforts (Initiative 2)</li> </ul>

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Natural Gas RD&D Area	Existing/Planned RD&D	Proposed RD&D
<b>Climate and Drought-related Impacts</b>	<ul style="list-style-type: none"> <li>• Researching methane emissions from the natural gas system in California</li> <li>• Researching physical climate vulnerability of pipelines in the Sacramento-San Joaquin Delta</li> <li>• Developing climate scenarios including the impacts of mega droughts on the natural gas system</li> <li>• Evaluating cost, performance, and efficiency of hybrid cooling plants</li> <li>• Investigating climate vulnerability and resilience options for the natural gas system in the San Diego area, and other local areas</li> <li>• Researching market impacts on natural gas due to climate change and climate policies</li> </ul>	<p>2) Groundwater Related Subsidence Impacts on the Natural Gas System (\$1.6 million):</p> <ul style="list-style-type: none"> <li>• Research to identify areas with relatively high risk of potential pipeline damage and failures due to subsidence</li> <li>• Verify actual damage to infrastructure, ideally in coordination with the CPUC and the utilities</li> <li>• Identification of potential remedial actions</li> </ul>

Natural Gas RD&D Area	Existing/Planned RD&D	Proposed RD&D
<b>Long Term Strategic View</b>	Overall RD&D in areas including efficiency, biogas/renewable natural gas, and natural gas transportation supports improved use of this resource in a low-carbon, low-water landscape in concert with other energy resources	3) Long Term Strategic View of Natural Gas Use in a Carbon-Constrained, Water-Efficient Environment (\$500,000) <ul style="list-style-type: none"> <li>• Assess and analyze state carbon emission goals and evaluate factors that will determine the role of natural gas in the future</li> <li>• Complement existing market scenario studies by additionally evaluating the impacts of hydrogen and biomethane innovations</li> </ul>

**The CEC's continued efficient use of program R&D and administrative funds is appropriate.**

The CEC shall administer this supplementary plan using its existing FY 2015-16 administrative budget, at no additional cost to natural gas ratepayers. We urge the CEC to continue to take measures to promote administrative efficiency.

**The proposed supplement reflects high-priority climate and energy state policy directives and the direction in Resolution G-3507.**

As stated in the supplementary plan, there may be critical areas needing innovation in the near term: ground subsidence has been exacerbated in California as groundwater is depleted, and these conditions and impacts may be

persistent due to climate change. Subsidence can affect pipelines, and though there are guidelines to address impacts on pipeline integrity, it is unknown exactly how and where the recent, rapid, and potentially persistent subsidence impacts natural gas infrastructure in California.

We view the proposed research to address these knowledge and innovation gaps as highly important. However, we encourage the CEC not to necessarily pre-determine or limit its investigations under this initiative strictly to the Central Valley. While this may be a prime focus area, it should not be the exclusive one, as important state infrastructure lies outside of the valley. Findings and applications, at the least, should consider the state network more broadly, especially the impacts to California's High Consequence Areas as determined by the U.S. Department of Transportation Pipeline & Hazardous Materials Safety Administration.

The supplemental filing also identified ways the CEC is accelerating the related initiatives in its existing FY 2015-16 plan. We support these measures, as though R&D programs often have longer timelines, even preliminary results will support immediate improvements in these areas. We expect these high-priority initiatives to be developed and released as quickly as possible.

Additionally, as noted in its plan, pipeline safety efforts should be coordinated as closely as possible with the relevant utilities and CPUC proceedings and/or applicable safety and enforcement activities. The CEC should work closely with Energy Division and Safety and Enforcement Division staff to share implementation plans and progress, as possible; gather input, as necessary; and share findings as they become available. The CEC should especially notify Energy Division staff if it needs assistance coordinating with utilities during implementation.

During the period of our review, the CEC organized a public workshop focusing on the confluence of ground subsidence and natural gas pipeline safety. All applicable new knowledge and beneficial stakeholder input from this workshop should be incorporated into the CEC's administration of this RD&D.



The proposed initiatives appropriately address and advance the priority areas identified by Resolution G-3507.

**The CEC's supplementary *Proposed Climate, Drought, and Safety Natural Gas Budget Plan* is approved.**

In accordance with D.04-08-010 and Resolution G-3507, the CEC provided the supplementary proposed R&D plan for FY 2015-2016 to the Energy Division. The Energy Division has reviewed the plan and found it to be submitted properly in compliance with D.04-08-010. The basic program areas meet the criteria for public interest gas R&D projects laid out in the Decision and the CEC reasonably allocated the program's existing, unused funds to the critical research areas. We authorize the CEC's proposed \$3.6 million research plan and urge its swift execution.

## **COMMENTS**

Public Utilities Code section 311(g)(1) provides that this resolution must be served on all parties and subject to at least 30 days public review and comment prior to a vote of the Commission. Section 311(g)(2) provides that this 30-day period may be reduced or waived upon the stipulation of all parties in the proceeding.

The 30-day comment period for the draft of this resolution was neither waived nor reduced. Accordingly, this draft resolution was mailed to parties for comments on October 29, 2015. No comments were filed.

## **FINDINGS**

1. The CEC filed its *Natural Gas Research, Development, and Demonstration Program, Proposed Program Plan and Funding Request for Fiscal Year 2015-2016* per D.04-08-010.
2. The CEC's *Natural Gas Research, Development, and Demonstration Program, Proposed Program Plan and Funding Request for Fiscal Year 2015-2016* was approved by this Commission in Resolution G-3507.

3. In Resolution G-3507, the CEC was directed to file a supplementary plan to invest previously-authorized, unused program funds in critical areas.
4. The areas of natural gas pipeline safety, impacts from climate change and drought-related subsidence, and the long-term view of natural gas resources in a low-carbon environment were determined to be critical needs areas, particularly due to recent severe drought conditions, Governor's Executive Orders, and ongoing natural gas pipeline safety issues.
5. The CEC timely filed the instant *Proposed Climate, Drought, and Safety Natural Gas Budget Plan* as a supplement to its *Natural Gas Research, Development, and Demonstration Program, Proposed Program Plan and Funding Request for Fiscal Year 2015-2016*, addressing critical areas as directed.
6. The CEC reasonably selected initiatives in the critical areas, and reasonably allocated the existing, unused funds in its program fund to the different areas.
7. Because the funds invested by the plan approved herein are existing, authorized funds, this critical, time-sensitive work will be completed at no additional ratepayer cost and will require no additional utility remittances.
8. The CEC's administrative efficiency, coordination efforts, and acceleration of existing plans in these areas demonstrate prudence and responsiveness to the Commission's direction in Resolution G-3507.
9. The CEC's *Proposed Climate, Drought, and Safety Natural Gas Budget Plan* for the re-investment of \$3.6 million in unused program funds should be adopted.
10. The approval of these unspent funds does not constitute an increase to the CEC's annual program budget maximum of \$24 million, and the Commission has not yet determined the reasonableness of the overall PIER Natural Gas R&D Program or of the funding level beyond FY 2015-2016.

**THEREFORE IT IS ORDERED THAT:**

1. The CEC's *Proposed Climate, Drought, and Safety Natural Gas Budget Plan* is approved and shall be executed using up to \$3.6 million in existing, unspent program funds.
2. In its overall implementation of the FY 2015-16 Natural Gas R&D Budget, the CEC shall reflect the urgency and priority of recent State policy directives by prioritizing the climate change, drought, and natural gas safety initiatives approved herein, and executing those efforts first or as soon as possible.

This Resolution is effective today.

I certify that the foregoing resolution was duly introduced, passed and adopted at a conference of the Public Utilities Commission of the State of California held on December 3, 2015; the following Commissioners voting favorably thereon:

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TIMOTHY J. SULLIVAN  
Executive Director